

Two hardy bamboos of East China

W. M. PORTERFIELD

Among the less conspicuous bamboos of East China are two species whose hardy nature fits them to the wild hill-top region where they are mostly found. Over the hillsides around Soochow, Wusih, Hangchow and Zakow the tough cane brakes of the exposed places are made up of either one or the other or both of these species. Both of them are small but for all that they pass through the rigours of cold and wind with all leaves "waving," as it were; their green foliage brilliant in the sun, a constant reminder that life though dormant is ever present.

The first of these species is *Arundinaria nitida* Mitford, the Brilliant Bamboo. The first description of it was made by A. B. Freeman-Mitford, C. B., in *Gardeners' Chronicle*, xviii, p. 186, in 1895. In this account the specific name "nitida" was given. In the *Bamboo Garden* (1896) by the same author an exceptionally fine account of this same species is given (p. 73). It appears that it was first discovered in Messrs. Veitch's collection at Combe Wood, England. After much confusion and numerous misnamings its history was unearthed. In 1889 Dr. Regel, Director of the Botanic Garden of St. Petersburg sent Messrs. Veitch seed which had been collected by a Russian traveller, Mr. Potanin, in North Szechuen. Some of the seed grown under glass in St. Petersburg shows it to be the same which appears in Mr. Veitch's collection. This interesting fact bears out a general theory held by the then Director of Kew Gardens to the effect that hardy bamboos may be expected to have developed and penetrated into Northwest China as part of an extensive spread of the Himalayan Flora.

A technical description of *Arundinaria nitida* may be found on p. 33 of *Les Bambusées* by E. G. Camus (1913), but herewith I append my own observations which will enable those who tramp over the hillsides to identify it. It constitutes a scrubby growth over open land populated by occasional conifers giving some shelter and shade as this species is a bit more retiring than the second one. In optimum conditions it grows to be $7\frac{1}{2}$ to 8 ft. or about 2.28 meters in height but is usually shorter. It has purplish culms with almost smooth, thinly stri-



ARUNDINARIA NITIDA

Reproduction of a drawing by Alfred Parsons from "The Bamboo Garden"
by A. B. Freeman-Mitford C. B.

ated internodes. The latter are long and rounded in cross-section. The sheath scar just below the point where the branches emerge is furry and has a jutting ring-like ridge immediately below it. There is a whitish bloom, or powder, under each of the upper nodes.

The branches are short and begin with about the fourth node of the culm, the longest one of one foot length springing from the seventh node and ranging shorter above and below. There are four branches at a node with smaller almost erect adventitious branches originating between them. Sheaths are persistent on the branches and there are no branchlets. The first internode of the branch forms a sharp angle with the culm, the second bends away abruptly and the distal ones ascend curving inward at their ends.

The leaves are in terminal clusters of 3 to 4, with sloping leaf base and attenuate apex. The length is 10-14 cm., the width 1.3-2.0 cm. and they are deep green in color. No hairs appear at the throat of the leaf sheath. The edges of the leaf are smooth at the base but spinulose along both edges at the tip, a little below more so along one edge than on the other.

The second species is *Phyllostachys nidularia* Munro, the "Scrub Bamboo" which grows to about the same height as *Arundinaria nitida* but inhabits more exposed regions up to 2,500 ft. altitude. It was first described by Colonel Munro in Gardeners' Chronicle, ii, p. 773 in 1876. The technical description in Les Bambusées is found on p. 63. It is easily distinguished from the latter by its yellow culms, prominent nodes with dark band below each one, and its shorter zigzag internodes flattened on one side in the branching region. A papery membrane lines the hollow cavity of the internodes.

The branches are longer in proportion to the height of the culm than are those of the previous species and they begin at the fifth node, the length being two feet. The basal internode of the branch is solid, with only a pin-hole cavity in the others. Two branches spring from each node, one long and one small, the latter sometimes more erect. The twigs are shiny and purplish. At the nodes of the branches are also two branchlets, one large and one small. No adventitious branches appear in succeeding years.

The leaves are smooth, waxy, yellow-green, almost coria-

ceous, not withering when picked, and are in terminal clusters of two. They have a rounded base and an attenuate tip which dies back in the winter and is most always recurved. The width is 1.4–1.7 cm., the widest part being $\frac{1}{3}$ the distance from the base. The length of the leaf is from 7–8 cm. One edge is finely spinulose and the blade is generally at right angles to the petiole. The leaf sheath has erect bristly hairs at the throat.

The reason the specific name "nidularia" which means "little nest," was given this species of bamboo is because of the resemblance of the inflorescence to a bird's nest. The compact head-like clusters of grassy flowers appear annually on special leafless shoots which are shorter than the others. I have found flowers in full bloom in January when the ground was covered with snow. Usually bamboos flower only after many years of vegetative growth and then all culms burst into flower, set seed and die. This apparent breaking up of the periodicity in this species is an indication of an evolutionary step tending to bring the life cycle more in line with the seasonal changes of modern times.

The Scrub Bamboo can be cultivated and trimmed into an effective hedge. Its branches are also cut by the farmers and made into coarse brooms. Without doubt it is the toughest growth to break through and the sharp stubble will pierce even shoe leather.

Both of these bamboos though belonging to different genera are monopodial, i.e., the culms spring singly from a running rhizome; they are about the same height; their leaves do not wither when picked, a test of a hardy bamboo; and they inhabit waste places. On the other hand they differ in the fact that *Arundinaria nitida* has purplish culms while those of *Phyllostachys nidularia* are yellow; that the former has short branches four or more in number while the latter has two which are longer and of unequal length; and that the length of the internodes of the former are longer than those of the latter. These two small bamboos are the commonest of the hardy bamboos of East China.

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